

**DECISION NOTICE  
AND  
FINDING OF NO SIGNIFICANT IMPACT**

***SUSTAINED REDUCTION  
OF  
NON-NATIVE RATS, CATS AND MONGOOSES  
FROM  
VIRGIN ISLANDS NATIONAL PARK***

**U. S. D. I. National Park Service  
Virgin Islands National Park  
St. John, U. S. Virgin Islands**

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**INTRODUCTION**

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This Decision Notice (DN) and Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt a program for the sustained reduction of non-native rats, cats and mongooses from Virgin Islands National Park (VINP) and the determination that no significant impacts on the human environment are associated with that decision.

The FONSI is based upon a Draft Environmental Assessment (EA) released in June 2001 and a Final EA released in October 2001, and comments of agencies and the public on the EA. The purpose of the EA was to evaluate the effects of a proposed sustained reduction program for non-native rats, cats and mongooses from Virgin Islands National Park. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and NPS policy and guidelines. The Final EA is available for public review at the following locations:

Visitor Contact Station  
Virgin Islands National Park  
St. John, VI

Elaine I. Sprauve Public Library  
St. John, VI

Enid M. Baa Public Library  
St. Thomas, VI

National Park Service Headquarters  
Christiansted; St. Croix, VI

The Final EA may also be viewed at [www.nps.gov/viis](http://www.nps.gov/viis) or [www.friendsvinp.org](http://www.friendsvinp.org). Printed or electronic copies of the Final EA can be requested from the National Park Service at (340) 693-8950 extension 224 or at [Rafe\\_Boulon@nps.gov](mailto:Rafe_Boulon@nps.gov).

The NPS decision is to select Alternatives 2, 4 and 6 as described in the Final EA.

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## **PUBLIC INVOLVEMENT**

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Implementation of this EA could affect Park visitors, commercial operators, island residents, the integrity of natural and cultural resources, and the status of listed threatened and endangered species. Therefore, public participation has been a critical element in its preparation. The public involvement process for the EA provided three distinct phases of public information on and review of plan elements: (1) scoping of issues to be analyzed in detail in the EA, (2) Draft EA, and (3) Final EA.

A Draft EA was released for 30 days of public review on June 15, 2001, with a press briefing conducted in conjunction with its release. The deadline for comment was extended by an additional ten days to ensure the public had sufficient time to review this complex document. Public review opportunities included:

- Distribution of more than 20 copies of the Draft EA.
- Developing news stories describing the effects of exotic predators on the park's wildlife, flora and cultural resources that appeared in the park paper and several local newspapers and radio stations.
- Briefings with NPS staff, Friends of VINP, staff of the USVI Department of Planning and Natural Resources, and other key community leaders and interest groups.
- Posting of the Draft and Final EA and newsletter summary on the web sites for VINP and the Friends of the VINP.

In addition to input received informally, twelve written comments were submitted during the 40-day comment period, plus a petition signed by 44 people from the Friends of St. John Cats. Issues raised include: requests for an extension of the public comment period; establishment and maintenance of non-native cat colonies; humane treatment of non-native domestic cats; animal-proof trash containers and garbage collection; use of poisons to control non-native wild animal populations; and plan organization issues.

A Final EA was released for 14 days of public review. No additional comments were received during this 14-day public review period.

Based upon comments on the Draft and Final EA's, additional analysis was conducted and modifications were made to the Proposed Action. NPS's responses are provided in an errata sheet to this DN/FONSI.

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## **ALTERNATIVES ANALYZED**

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### ***Range of Alternatives***

Six alternatives, including three "No Action, Continue Current Level of Management" alternatives (1, 3 and 5) and the agency's three Proposed Actions (2, 4 and 6), were analyzed in detail in the EA. These alternatives were developed based on issues raised in scoping, public comment, and the VINP's purpose and significance. The EA discloses the potential environmental consequences that may result from implementation of various alternative management strategies. Comments received during public review of the Draft EA were considered in preparation of a Final EA and this FONSI/DN.

Alternative 1. Non-native Rat Control, No Action, Continue Current Level of Management. Under Alternative 1, the “No Action” alternative for non-native rat control, Norway and roof rats would continue to flourish essentially unabated throughout Virgin Islands National Park. There would be no use of rodenticides, except for the continued localized baiting in Park buildings. With no rodenticide application, the non-native rat population would not be controlled, and the number of rats on the island would fluctuate within the annual cycle.

Elements Common to all No Action, Continue Current Level of Management Alternatives (1, 3 and 5). NPS would continue to animal-proof trash receptacles and dumpsters at campgrounds, day use sites, concession areas, park overlooks, and employee housing areas and collect trash on a regular basis. In fiscal year 2002, the NPS requested \$30,000 in funding to purchase and install an additional 20 pre-manufactured animal-proof trash containers at major concession operations to collect both refuse and recyclables.

Alternative 2. Non-native Rat Control, Proposed Action – Sustained Reduction. Under Alternative 2, the Proposed Action, the National Park Service, in cooperation with the U.S. Department of Agriculture’s Animal Plant Health Inspection Service / Wildlife Services Division, will conduct a site-specific non-native rat population reduction program using a combination of trapping, rodenticide applications, and other cultural practices within Virgin Islands National Park. The goal will be to substantially reduce the non-native rat population in Virgin Islands National Park and to sustain a reduced population. This will be accomplished through a three-phase approach:

Phase I will include the development of a basic Non-native Rat Action Plan with NPS concession operators and educating them and key NPS staff in implementing the plan using an Integrated Pest Management approach. This can only be accomplished through consensus-building efforts from each group or partner involved. In addition, reductions in food, harborage and building access are essential early steps. A comprehensive inspection of every concession and NPS building by trained personnel and the application of mechanical rodent-proofing techniques to restrict access will be conducted. The surrounding areas will be inspected and treated with landscaping alterations aimed at reducing rat harborage at such sites as Caneel, Trunk and Cinnamon. For example: remove and maintain vegetation from within 18 inches of all structures, including trash receptacles; and remove and maintain brushy vegetation from within 12 inches of the ground. Trash collection procedures, including storage practices and removal schedules, will be reviewed and revised such that a minimal amount of available food will be present during the majority of the time. Particular emphasis will be placed on ensuring that virtually no food is accessible at night and especially outside. Trash receptacles will be retrofitted to exclude rats, cats and mongooses (and burros). The campground will issue and require the use of rodent-proof food storage containers for all cottage, tent and bare site guests.

For Norway and roof rats, Phase II will consist of a initial single, large scale direct reduction using bait stations with diphacinone or baited live traps throughout the Park. Follow-up trapping/census will reduce populations by approximately 80% of what their current populations are estimated to be through an initial snap-trap census. The trap census technique (Witmor, 1998) will be employed for this estimate. Rat populations will be monitored and maintained at acceptable levels with continued trapping and use of bait stations.

Elements Common to all Proposed Action Alternatives (2, 4 and 6). Phase III is the ongoing monitoring and record-keeping portion essential to maintain the goal to sustain the reduction. General visual monitoring will be conducted quarterly in the evening to ascertain relative rat populations within high visitor use areas. The numerous changes to reduce trash, food and harborage in Phase I must be regularly

monitored along with the rat population. Snap trap surveys may also be used to verify potential rapid population increases, as personnel are available. The consensus-building efforts that were necessary to accomplish Phase I must be ongoing, as new people become involved and others leave. The Park intends to work cooperatively with partners including concessionaires, residents, non-government organizations (NGO's) and visitors. The Park will facilitate the development of a comprehensive educational campaign with key NGO's and will disseminate the information through the newspaper, radio and Internet. The key areas of Phase III include monitoring, partnerships and education, and these must be sustained over the long run.

Alternative 3. Non-native Cat Control, No Action, Continue Current Level of Management. Under Alternative 3, the "No Action" alternative for non-native domestic cat control, cat colonies would continue to flourish essentially unabated throughout Virgin Islands National Park. The no action alternative would result in occasional non-native cat removal efforts by Park and concessions personnel as a stopgap measure when local populations become excessively large.

Other cat control measures would be as described above for Alternative 1, paragraph 2.

Alternative 4. Non-native Cat Control, Proposed Action – Sustained Reduction. Under Alternative 4, the Proposed Action, the National Park Service, in cooperation with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division, will conduct a site-specific non-native domestic cat population reduction program using trapping followed by adoption, and other cultural practices within Virgin Islands National Park. The goal will be to reduce the non-native cat population to zero or near zero throughout the Park. This will be accomplished through a three-phase approach:

Phase I includes the development of a basic Non-native Domestic Cat Action Plan with NPS concession operators and educating them and key NPS staff in implementing the plan using an Integrated Pest Management approach. This will be accomplished through consensus-building efforts with each concerned group or partner. Support will be solicited from the St. John Animal Care Center to develop and implement corrective information on a continuous basis. To prevent cats from becoming predators and harming wildlife, the NPS will work closely with local landholders and communities in an effort to stem the flow of non-native domestic cats into the Park by promoting responsible cat ownership. NPS will support programs to neuter or spay cats before reaching reproductive age, register cats, and encourage owners to keep their cats indoors; and do not release unwanted animals in Park natural areas. NPS will work with the scientific, conservation and animal welfare communities to educate the public about the dangers that free-roaming cats pose to human health, birds and other native wildlife and the hazards to free-roaming cats.

For non-native cats, Phase II consists of an initial, single, large-scale direct reduction using live traps followed by adoption where possible. The Park will assist the St. John Audubon Society to register domestic cats using free ear-tags and break-away collars. A St. John veterinarian has offered to tattoo ears of domestic cats for the cost of anesthesia. Any collared or tattooed animals will be returned to their owners. Unmarked animals will be provided to the St John Animal Care Center (SJACC). Cats testing positive for Feline Immunodeficiency Virus or Feline Leukemia Virus will be destroyed by American Veterinary Medical Association (AVMA) approved methods. Veterinarians working for or subsidized by the SJACC will sterilize cats testing negative for those viral diseases and clip their left ear. These cats will be placed for adoption or released to a feeding station outside the Park boundary. Cats that are recaptured twice after they were treated and released by SJACC will be given to the Humane Society of St. Thomas and St. John.

Follow-up census/trapping efforts will attempt to remove approximately 100% of the 15-30 existing non-native cats at such sites as Trunk, Cinnamon and Francis Bays and Annaberg. Initially, efforts would be made with interested individuals to remove cats from throughout the Park prior to trapping. Traps will be checked at no greater than 6-hour intervals so cats are subjected to minimal stress.

Phase III will be as described above for Alternative 2.

Alternative 5. Non-native Mongoose Control, No Action, Continue Current Level of Management. Under Alternative 5, the “No Action” alternative, non-native mongoose would continue to flourish essentially unabated throughout Virgin Islands National Park. There would continue to be only very localized trapping in Park buildings and campgrounds. Without widespread trapping, the non-native mongoose population would not be controlled, and the number of mongooses on the island would fluctuate within the annual cycle.

Other mongoose control measures would be as described above for Alternative 1, paragraph 2.

Alternative 6. Non-native Mongoose Control, Proposed Action – Sustained Reduction. Under Alternative 6, the Proposed Action, the National Park Service, in cooperation with the U.S. Department of Agriculture’s Animal Plant Health Inspection Service / Wildlife Services Division, will conduct a site-specific non-native mongoose population reduction program using live traps baited with chicken or sardines, and other cultural practices within Virgin Islands National Park. The goal will be to substantially reduce the non-native mongoose population to approximately 85% of the current population at key population centers throughout the Park. This will be accomplished through a three-phase approach:

Phase I will include the development of a basic Non-native Mongoose Action Plan with NPS concession operators and educating them and key NPS staff in implementing the plan using an Integrated Pest Management approach. The trash collection procedures, including storage practices and removal schedules described above for non-native rats will assist with mongoose reduction efforts. Rodent-proof food storage containers will be issued to and must be used by cottage, tent and bare-site guests in the Campground.

For mongooses, Phase II will consist of a single, large scale direct reduction using live traps baited with chicken or sardines at selected sites throughout the Park. Follow-up census/trapping will reduce populations by approximately 80% of what their current populations are estimated to be. This approximation is based on survey estimates from Nellis and Evererd (1983), who found intensive trapping over the short-term yielded about 80% of the local mongoose population to an acceptable level. Captured mongooses will be humanely euthanized using sodium pentobarbital or other AVMA approved methods.

Phase III will be as described above for Alternative 2.

### ***Environmentally Preferable Alternatives***

In accordance with CEQ regulations, I have considered all alternatives in this analysis and have determined that Alternatives 2, 4 and 6 are the environmentally preferable alternatives. The environmentally preferred alternative is defined by CEQ as the alternative “that will promote the national environmental policy as expressed in NEPA’s Section 101. Generally, this means the alternative that

causes the least damage to the biological and physical environment and best protects, preserves and enhances historic, cultural and natural resources.” (40 CFR 1500-1508, *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations*, Question 6a). Of the alternatives analyzed, Alternatives 2, 4 and 6 best respond to NPS goals to balance the public need for visitor services with the mandate to preserve and interpret the significant resources for which VINP was established. Potential adverse effects on natural and cultural resources will be reduced over those in the no action alternatives. By reducing the population of non-native rats, cats and mongooses inside the Park, adverse impacts to visitors, residents and natural and cultural resources will decrease. The proposed reduction programs will produce minimal or no damage to Park resources or threats to visitor and employee safety. Collectively, non-native rat, cat and mongoose populations pose a very great threat to the native natural resources, long-term resource management programs of the Park, and visitor health and safety. Consequently, the Proposed Actions will cause the least damage to the biological and physical environment and best protect, preserve and enhance the Park’s historic, cultural and natural resources. Alternatives 2, 4 and 6 best fulfill NPS’s statutory mission and responsibilities; best meet the purpose and need for a sustained reduction of non-native rats, cats and mongooses; best respond to the very great issues identified through public and agency scoping; and achieve the best balance of environmental, visitor experience, economic, and other factors.

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## DECISION AND RATIONALE

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### *Rationale*

People have accidentally or intentionally introduced hundreds of non-native species into natural communities worldwide, and while many die out, some persist and become pests. It is now widely accepted that the current rates of species extinctions are dramatically higher than background rates; most current extinctions can be directly attributed to human activity; and for ethical, cultural, aesthetic and economic reasons, the current extinction rate is cause for considerable concern. Human-caused extinctions can be roughly divided into four broad categories: non-sustainable use of resources, habitat destruction, pollution, and introduced non-native species.

Results of the first three categories are often acute and can directly affect human and native wildlife welfare on an observable time scale. The human-related impacts have made them the focus of public environmental concern. The introduction of non-native species has received less publicity and professional attention; however, introduced species are responsible for 39% of all recorded animal extinctions since 1600 for which a cause could be attributed (Treshy and Croll 1994 Reference). Thus, some impacts of introduced species are irreversible and at least as devastating as the other categories. Once established, introduced species often become permanent in ecological time unless intentionally removed.

Native wildlife in island ecosystems are particularly vulnerable. Of the 484 recorded animal extinctions since 1600, 75% have been island endemics. Introduced species were completely or partially responsible for 67% of these extinctions (based on the 147 island species for which the cause of extinction is known). Islands are also important for the conservation of biodiversity, as well (World Conservation Monitoring Centre 1992 Reference).

With the exception of bats, the Virgin Islands National Park is presently inhabited by numerous species of non-native mammals that have produced severe impacts on many indigenous species of plants and

animals and threats to visitor safety. Feral or wild mammals include the white-tailed deer, donkey, wild hog, domestic goat, domestic cow, domestic sheep, European boar, West Indian mongoose, tree rat, Norway rat, domestic cat, domestic dog and house mouse. Some of these species also threaten visitor experience and safety. With the possible exception of deer, increasing populations of these species are seriously affecting native species of plants and animals. Additionally, introduced species of birds, amphibians, reptiles, insects and plants are impacting the fragile environment.

Great numbers of wildlife are lost each year to relatively small non-native rat, cat and mongoose populations. Small islands typically have both smaller resident wildlife populations and lower species diversity. This is particularly true on very small and highly fragmented islands such as St. John, because most negative impacts are concentrated and accelerated when compared with similar impacts to a larger landmass. Therefore, the cumulative impacts associated with these increasing wildlife losses are substantial.

NPS is mandated to destroy animals that are determined to be injurious to native flora and fauna. Management of populations of exotic plant and animal species, up to and including eradication, will be undertaken whenever such species threaten Park resources or public health. High priority will be given to the management of exotic species that have a substantial impact on Park resources and that can be expected to be successfully controlled (NPS Natural Resources Management Guideline 1991, Chapter 2, Page 286).

A single, rapid population reduction effort is necessary to reduce the present populations to an acceptable level. Because additional non-native rats, cats or mongooses can enter the Park from adjacent lands, an acceptable population size (limit) must be established. The population must be either periodically censused or threshold visual estimators be developed to ensure the program goals are achieved.

Eradication is impractical and impossible as a feasible alternative due to the size of St. John and the large number of inholdings. Therefore, efforts will focus on sustained control of the non-native rat, cat and mongoose populations and a concomitant reduction in their impacts on natural resources. To achieve this goal, a combination of techniques will be initiated in three phases. In the first phase, various techniques will be employed to reduce harborage and food resources for the present populations. In phase two, techniques will be used to quickly reduce populations to acceptable levels throughout the Park. Phase three will be to monitor and remove individuals that exceed threshold levels.

### ***Decision***

The NPS decision is to select Alternatives 2, 4 and 6 as described in the Final EA. Under these Alternatives, the National Park Service in cooperation with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division, will conduct a site-specific non-native rat, cat and mongoose population reduction program within Virgin Islands National Park using a combination of trapping, rodenticide applications, and other cultural practices. Key steps will include: 1) establish current and acceptable population estimates; 2) identify food sources and develop methods to reduce available food and habitat; 3) develop strategies for reduction; 4) public education; 5) long-term monitoring; and 6) periodic removal. The approach must be integrated and include partnerships with concessionaires, adjacent landowners/inholdings and relevant community groups.

Especially essential will be reduced harborage and building access for rats, cessation of cat disposal and feeding on Park lands by residents and visitors, and elimination of human-created food resources for all species. Large populations can only exist if sufficient food is available. Therefore, when the food supply

is reduced, the population will fall. Increased sanitation, more frequent trash pick-up, animal-proofed trash receptacles, and enhanced food preparation and storage practices will all reduce food availability. These actions must be well established before a large-scale population reduction effort is initiated. Habitat reduction methods are very important to limit population growth, particularly with non-native rats. Changing landscaping practices and sealing access to buildings are inexpensive remedies for habitat reduction. Periodic inspections by qualified personnel are necessary to minimize new harborage and rodent access.

The three phases of the Proposed Actions are as follows:

***PHASE I – Planning, Logistics, Consensus-Building, Food/Habitat Reduction***

1. Establish 1 – 3 human activity zones and tolerance limits for each zone and species.
2. Monitor food and trash (both food and non-food) handling and storage facilities, areas, practices, receptacles and schedules throughout the Park.
3. Inspect landscaping and buildings in high and medium human use zones with specific attention to non-native rat, mongoose and cat harborage, usage and access.
4. Develop basic, comprehensive Non-native Rat, Cat and Mongoose Action Plans with Park concessionaires.
5. Educate key NPS and concessionaire personnel about the Plan.
6. Simultaneously implement measures to reduce harborage, food availability and food/building access by non-native rats, mongooses and cats (by a combination of methods):
  - a. Comprehensive inspection;
  - b. Mechanical rodent-proofing techniques;
  - c. Revise trash schedules;
  - d. Curtail cat feeding practices;
  - e. Issue and require campers to use rodent-proof containers in the campground;
  - f. Retrofit trash receptacles to exclude non-native rats, cats and mongooses; and.
  - g. Improve food storage facilities.

***PHASE II – Quick Population Reduction***

After implementing Phase I, conduct large-scale direct reduction efforts to rapidly and substantially reduce non-native rat, cat and mongoose populations until acceptable population limits are achieved in cooperation with the U. S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division.

Alternative 2. Non-native Rat Control, Proposed Action. For Norway and roof rats, Phase II methods will consist of an initial single, large scale direct reduction using bait stations with diphacinone or baited live traps throughout the Park. Follow-up trapping/census will reduce populations by approximately 80% of what their current populations are estimated to be through an initial snap-trap census. The trap census technique (Witmor, 1998) will be employed for this



estimate. Rat populations will be monitored and maintained at acceptable levels with continued trapping and use of bait stations.

Alternative 4. Non-native Cat Control, Proposed Action. For domestic cats, Phase II methods consist of an initial, single, large-scale direct reduction using live traps followed by adoption where possible. The Park will assist the St. John Audubon Society to register domestic cats using free ear-tags and break-away collars. A St. John veterinarian has offered to tattoo ears of domestic cats for the cost of anesthesia. Any collared or tattooed animals will be returned to their owners. Unmarked animals will be provided to the St John Animal Care Center (SJACC). Cats testing positive for Feline Immunodeficiency Virus or Feline Leukemia Virus will be destroyed by American Veterinary Medical Association (AVMA) approved methods. Veterinarians working for or subsidized by the SJACC will sterilize cats testing negative for those viral diseases and clip their left ear. These cats will be placed for adoption or released to a feeding station outside the Park boundary. Cats that are recaptured twice after they were treated and released by SJACC will be given to the Humane Society of St. Thomas and St. John.

Follow-up census/trapping efforts will attempt to remove approximately 100% of the 15-30 existing non-native cats at such sites as Trunk, Cinnamon and Francis Bays and Annaberg. Initially, efforts will be made with interested individuals to remove cats from throughout the Park prior to trapping. Traps will be checked at no greater than 6-hour intervals so cats are subjected to minimal stress.

Alternative 6. Non-native Mongoose Control, Proposed Action. For mongooses, Phase II methods will consist of a single, large scale direct reduction using live traps baited with chicken or sardines at selected sites throughout the Park. Follow-up census/trapping would reduce populations by approximately 80% of what their current populations are estimated to be. This approximation is based on survey estimates from Nellis and Evererd (1983), who found intensive trapping over the short-term yielded about 80% of the local mongoose population to an acceptable level. Captured mongooses will be humanely euthanized using sodium pentobarbital or other AVMA approved methods.

### ***PHASE III – Monitor the Sustained Reduction***

1. Monitor non-native rat, cat and mongoose populations, harborage, food availability, trash collection schedules, etc. regularly, using checklists. Cat and mongoose populations will be monitored using standard visual census techniques in centers of high human activity on a periodic basis. Feeding of wildlife within the Park must be discontinued. Rats will be trap-censused as described elsewhere, on a periodic basis.
2. Maintain monitoring logs, continue routine building inspections, continue successful landscaping practices, and maintain comprehensive and accurate records.
3. Work effectively and cooperatively with partners including concessionaires, residents and visitors on an ongoing basis. Relationships must be continued as key directors or managers change in the numerous governmental and NGO's. Develop a comprehensive educational campaign with the partners and together routinely disseminate the information through a variety of media including newspaper, radio, and the Internet.

The timeframe for implementing each phase of the sustained reduction program will be: Phase I and Phase II concurrent for the next twelve months starting in April or May 2002; and Phase III will monitor the populations and other implemented changes, such as habitat and food, indefinitely. The educational component and continued partnerships must be sustained indefinitely.

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## **ENVIRONMENTAL CONSEQUENCES**

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The potential consequences of the Proposed Actions (Alternatives 2, 4 and 6) and alternatives are analyzed in detail in the EA and key impacts are summarized below:

### ***Effects to Threatened and Endangered Species***

The National Park Service is required to identify and promote the conservation of all Federally listed threatened, endangered, or candidate species within park boundaries and their critical habitats. The NPS is also required to protect all state and locally listed threatened, endangered, rare, declining, sensitive, or candidate species that are native to and present in the Parks, and their critical habitats (NPS Management Policies 2001).

The sustained reduction program will greatly decrease population levels of three non-native predators (rats, cats and mongooses) that prey upon eggs or chicks from all bird species nesting on St. John. Of particular concern is depredation to Endangered brown pelicans and least terns, and the Threatened roseate terns. Territorially endangered species include ground and tree nesting species such as bridled quail dove, Bahama pintail duck and Antillean mango hummingbird, all of which suffer egg and chick depredation due to these predators. These non-native species are also primary predators of Endangered hawksbill and leatherback sea turtles that nest on the island. These predators depredate emergent hatchlings as they crawl from the nest to the ocean at night.

The proposed restoration program will not adversely impact any Federally listed threatened or endangered species or territorially listed endangered or rare species (U.S. Fish and Wildlife Service Consultation Letter of September 7, 2001). The baits used will not produce secondary toxicity, and the trapping methods used will not entrap any threatened or endangered species (Campbell 1989, Conry 1994, Witmer *et. al.* 1998).

### ***Effects to Wildlife***

Wildlife will be positively benefited by this program because very great numbers of native fauna including several native bird, reptile and amphibian species and numerous insect and spider species will benefit from the reduction of rat, cat and mongoose populations. In addition, five native bat species, the only indigenous mammals on the island, will benefit from reduced predation. Because herptofauna and invertebrates are small, often slow and readily available, they are particularly susceptible to local extinction from rat, cat and mongoose depredation. Of particular concern are the varied native reptile and amphibian populations in the Park and their associated links in the food and ecological web of the island.

### ***Effects to Wetlands and Floodplains***

Wetlands and floodplains will be positively benefited by this program because very great numbers of native fauna including several native bird, reptile and amphibian species and numerous insect and spider

species will benefit from the reduction of rat, cat and mongoose populations that prey upon these wildlife when using wetland habitats. Because herptofauna and invertebrates are small, often slow and readily available, they are particularly susceptible to local extinction from rat, cat and mongoose depredation. Of particular concern are the varied native reptile and amphibian populations in the Park and their associated links in the food and ecological web of the island.

### ***Effects of Rodenticides***

As described in the Non-native Rat Control Techniques section in Chapter II, the use of these rodenticides is not expected to produce any primary or secondary toxicity impacts to non-target wildlife. An anticoagulant type bait will be used because: 1) they are effective in very low concentrations; 2) there is an antidote (Vitamin K) to accidental poisoning; and 3) secondary hazards are lower than for more acute toxicants (Witmer 1998). Use of rodenticides will require authorization through Section 24© of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) from Southeast Region Integrated Pest Management (IPM) Program as well as the Washington IPM Office, on a case by case basis.

Several chemicals were considered for use including brodifacoum and zinc phosphate, but diphacinone (J. T. Eaton's Bait Blocks Rodenticide, EPA Reg. No. HI-970007) was selected due to the considerable existing data to support registration, its excellent record in other similar control programs, and low hazards to non-target species compared to more acute toxicants (Conry 1994). Diphacinone has been used extensively for rodent control since the 1960's. There have been no reported cases of secondary poisoning for raptors and only a few cases of poisonings in mammals. Diphacinone also has proven to be an excellent choice for mongoose control, an additional goal of this program.

The only non-target species that might have very large exposure to bait is the hermit crab. The concern is primarily one of baiting efficiency and not non-target hazards, as apparently the diaphacione has no effect on the crabs due to different blood composition (Campbell 1989). Efforts will be made to monitor and minimize this concern (i.e., elevation of baits, bait site selection, etc. as necessary). The risk to birds of secondary exposure through predation/scavenging of live /dead mice and rats containing rodenticide residues is low because field personnel will routinely recover dead rats and mice and bury them in the ground during all control operations.

Secondary toxicity will require a predator to eat several poisoned prey before reaching the threshold level to produce hemorrhaging. All the species of herptofauna living on St. John are primarily insectivorous and will be at a low risk of exposure to these rodenticides; the use of bait stations will exclude most individuals from exposure. The pelagic and roosting seabirds will be considered to be at a low risk of primary poisoning because they forage almost exclusively offshore and prefer live marine prey. There are no listed species present expected to eat baits or dead rats or dead mongooses. Brown pelicans are not scavengers and will not eat dead and poisoned rodents. The use of bait stations will exclude most of the landbirds that are either grain-eaters or omnivorous from primary exposure risks. Although there are incidences of poisoning in most island eradications, some impacted species recovered to population densities that were higher than densities before rodenticide application due to removal of predators (Empson and Miskelly 1999; Robertson *et. al.* 1999). Some birds of prey, such as Red-tailed Hawk and American Kestrel, and scavengers are not at risk of secondary exposure through predation/scavenging of live /dead mice and rats containing rodenticide residues because field personnel will routinely recover dead rats and mice and bury them in the ground during all control operations. Birds of prey eat only living animals, while poisoned rodents will die in their burrows and thus be out-of-sight for any potential scavenging of rodents killed by poison. Therefore, it is an extremely remote possibility that any birds of prey will ever locate and consume enough poisoned rodents to produce hemorrhaging.

### ***Effects on Vegetation***

Impacts to native flora will be reduced because fewer rats and mongooses will consume less vegetation. This is particularly important in the dry season, when bark and leaves are consumed for their moisture content. Also, fewer seeds from exotic plant species will be dispersed in fecal matter and in burrows. No impacts to native flora from cats will be expected.

### ***Effects on Cultural Resources***

Potential cultural resource impacts at the numerous historic sugar plantations throughout the Park and particularly near developed areas will be reduced by decreasing the rat population and sustaining the reduction. Extensive damage is sometimes done when Norway rats burrow under buildings. Foundations and lower floors of buildings have been weakened and some have collapsed when rats burrowed under them. This effort will reduce the impacts from burrowing, vegetation grazing and fecal and urine contamination throughout these valuable resources. The result will be safer, cleaner, healthier and more stable structures for interpretation and enjoyment. No impacts to cultural resources from cats and mongooses is expected.

### ***Socioeconomic Effects***

Visitor use patterns will be enhanced with a possible tourism increase under this reduction program or at least a reduced decline attributable to non-native rat, cat and mongoose impacts. Potential visitors, who opted to vacation in another area as the result of media coverage or word-of-mouth communication about the non-native rat, cat and mongoose problems may visit when the problems are resolved. The tourist experience at Virgin Islands National Park will be greatly improved.

### ***Effects on Visitor Experience***

The NPS will receive fewer complaints from visitors about unacceptable behaviors of hungry and abandoned cats. The NPS will receive fewer reports from doctors and the public about cat-caused diseases being passed to humans (cat scratch fever, various bacterial skin diseases) and others that are transmissible to domestic cats. Fewer visitors will be contracting "creeping eruption" (*Tinea corporis*, also known as ringworm), a fungal infection, while on the beach at Trunk Bay. This is transmitted via cat feces, deposited on the beach where conditions are favorable for bacterial survival.

Scenic values will be enhanced, as rats, cats and mongooses, will depredate less native faunal species. The aesthetic environment near dumpsters will be enhanced when trash and food wastes are not seen and offensive odors are reduced.

Visitor use patterns will be enhanced under this program because rats and mongooses will no longer steal or damage food items belonging to campers or picnickers. Fewer rats, cats and mongooses will disperse disease causing organisms in tents, on picnic tables, in restrooms and bathing facilities.

### ***Effects on Park Operations***

The overall costs of administration of the non-native wildlife control program will be increased with the implementation of the first contract to remove exotic wildlife (\$30,000 with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division), purchase and

installation of animal-proof trash receptacles and garbage cans, animal-proofing park and concessionaire structures, and construction of fences to exclude non-native animals from some developed areas.

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## **FINDING OF NO SIGNIFICANT IMPACT**

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Based upon the EA, the consequences of the Proposed Actions summarized above, and comments of agencies and the public, I have determined that Alternatives 2, 4 and 6 will not have significant effect on the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared.

Factors considered in making this finding include:

- The impacts resulting from the sustained reduction program will not impair any Park resources or value necessary to fulfill specific purposes identified in the park's enabling legislation. The program will not violate the NPS Organic Act.
- No threatened or endangered species or critical habitats are likely to be adversely affected. (September 7, 2001 letter from U.S. Fish and Wildlife).
- The NPS provided information to the Territory's State Historic Preservation Officer with the determination that the project will not cause adverse effects on archaeological and cultural resources including submerged resources and historic structures. Since no objection was received from the SHPO, pursuant to 36 CFR 800 of the National Historic Preservation Act, Section 106 compliance has been completed.
- The activities to be implemented by the Plan are consistent with the Coastal Zone Management Act and with the Coastal Zone Management Plan. NPS provided information to the Territory's Department of Planning and Natural Resources with the determination that the project is consistent with the Coastal Zone Management Act.
- The activities authorized by the Plan are consistent with NPS Management Policies and Natural Resources Management Guidelines, the General Management Plan and Resources Management Plan for the Virgin Islands National Park, and applicable Federal and Territorial laws and regulations and will comply with Executive Orders 11988 and 11990.
- The authorized activities for reducing non-native wildlife populations will not have a significant impact on public health and safety or on consumers, minority groups, American Indians, women, or the civil rights of any person.
- This program for reducing non-native wildlife populations is not a unique activity and the effects on the quality of the human environment are not likely to be highly controversial, nor are they highly uncertain or involve unique or unknown risks.

Recommended: **John H. King**  
Superintendent, Virgin Islands National Park

**4/11/02**  
Date

Approved: **W. Thomas Brown**  
for Regional Director

**4/11/02**  
Date

**ERRATA SHEET**  
**SUSTAINED REDUCTION OF NON-NATIVE RATS, CATS AND MONGOOSES**  
**FROM VIRGIN ISLANDS NATIONAL PARK**  
**Virgin Islands National Park**

**COMMENTS AND RESPONSES**

In addition to input received informally, twelve written comments were submitted during the 40-day comment period, plus a petition signed by 44 people from the Friends of St. John Cats on the Draft EA for Sustained Reduction of Non-native Rats, Cats and Mongooses from Virgin Islands National Park. Issues raised included: requests for an extension of the public comment period; establishment and maintenance of non-native cat colonies; humane treatment of non-native domestic cats; animal-proof trash containers and garbage collection; use of poisons to control non-native wild animal populations; and plan organization issues.

A Final EA was released for 14 days of public review. No additional comments were received during this 14 public review period. Based upon comments on the Draft and Final EA's, additional analysis was conducted and modifications were made to the Proposed Action. Substantive issues raised in these comments and NPS's responses are organized below by topic area.

**1. Requests for an Extension of the Public Comment Period**

*Comment:* The Humane Society of the United States is very interested in the issue of exotic species and their potential impact on native natural resources, and we would appreciate the additional time to review the Draft EA and comment on it.

*Comment:* USVI residents are not being granted the full federally mandated read/comment period of thirty days. First published on June 22, 2001, in the Daily News with a cut off date for comments by July 17, 2001. The NPS process has denied USVI residents sufficient time to read and respond to this cumbersome document.

*Response:* The NPS extended the deadline by an additional ten days to ensure the public had sufficient time to review the Draft EA. The Draft EA and supporting press release were posted on July 13, 2001 on WebPages for Virgin Islands National Park and the Friends of the Virgin Islands National Park at [www.nps.gov/viis](http://www.nps.gov/viis) or [www.friendsvinp.org](http://www.friendsvinp.org). Although not required under NEPA and NPS procedures, a Final EA was released in October 2001 for 14 days of public review. The EA summarized issues raised in any comments received. Based upon comments on the Draft and Final EA's, additional analysis was conducted and modifications were made to the Proposed Action.

**2. Establishment and Maintenance of Non-native Cat Colonies**

*Comment:* Studies have proven that trap-neuter-release is the single most successful method of stabilizing non-native cat colonies with the least possible cost to local governments and residents. Spaying/neutering homeless cats stabilize the population at manageable levels. It is more effective and less costly than repeated attempts at extermination. Costs for repeatedly trapping and killing non-native colonies are far higher than promoting stable, non-breeding colonies in the same location. Non-breeding

colonies establish territories, which prevents other cats from moving in. When these areas are vacated other cats that start the breeding process over again soon fill them.

*Comment:* What few cats that were left after your last park eradication have been spayed and neutered by The Animal Care Center of St. John. The cats are not a problem to the National Park. If anything the cats help with keeping the rat and mongoose population down.

*Comment:* Neutered colonies would require health care and feeding, but we know that on St. John there is a devoted group of volunteers already in place.

*Comment:* You don't say what you plan to do with the cats. Why don't you leave them alone? And why don't you want people to feed them when they're hungry? Your report says tourists don't like to see starving and begging cats so you're going to get rid of them. But they won't become starving, begging cats if you let people continue to feed them.

*Response:* NPS has modified the Proposed Action to include measures designed to address these concerns about non-native cat control techniques. Impacts are assessed in Chapter IV and current conditions are described in Chapter III (pages 36, 37 and 38). The description of Trap-Test-Alter-Vaccinate and Release Program (TTAVR) has been expanded to address a recent study by Dan Castillo at the Department of Environmental Studies at Florida International University (2001) that contradicts widely-held beliefs by cat colony proponents that well-fed cats do not kill wildlife, that cats are territorial and will prevent more cats from joining the colony, and that cat colonies decline in size over time (see pages 21 and 22).

Few Trap-Test-Alter-Vaccinate-Release programs have been carried out in rural areas with several cat colonies, and none reported colony diminution. The major problems are new introductions, trap-shy individuals and continued native fauna depredation even with adequate feeding. A mistaken or malicious abandonment of one pregnant cat can initiate the formation of an additional colony. Moreover, because supplemental feeding of treated cats is necessary to humanely conduct the program, many non-target species, including non-native rats and mongooses, are also fed.

Although it is often claimed that with Trap-Test-Alter-Vaccinate-Release programs colonies die out through attrition in just a few years, there is very little evidence to support this claim. The Adams Morgan cat colony of only 30 original cats in the District of Columbia, which was "managed" by the founders of Alley Cat Allies, took 10 years to die out. It is often difficult to trap all of the cats, the cat food that is left out attracts more cats, and cat colonies often become dumping grounds for unwanted pets (Donald 1992). Volunteers can become overwhelmed and may not have all of the financial resources or the manpower needed to trap and alter every cat in a colony (Passanisi and McDonald 1990).

The purpose of Trap-Test-Alter-Vaccinate-Release programs is not to eliminate cat colonies. If a neutered colony is removed, an intact colony will move in and take its place. More cats may move into an area only if the food source remains. If cats are trapped out and the food source is removed, a cat colony will not reform in that location. At Riverside National Park located in Washington DC (where over 25 cats were being fed daily), over the strong objections of the cat feeders and Alley Cat Allies, and in the face of a negative media campaign, the National Park Service removed the cats, the feeding was stopped, and no additional cats have congregated in the area. The cats were not euthanized, but taken to a local shelter (Sealy 1996).

The cat food left out attracts raccoon, skunk, opossum, fox, coyote, and rats, all predators of birds and carriers of diseases that can be transmitted to other cats, wildlife, or humans, such as rabies.



Some groups, such as the Non-native Cat Coalition, do not follow American Veterinary Medical Associations guidelines which state that cats in a “managed” cat colony should be tested and vaccinated for infectious diseases and adopted or euthanized if positive. Thus, diseased cats in “managed” cat colonies could come in contact with and infect free-roaming pet cats. Cats with fatal feline diseases will suffer and die a miserable death, calling into question the very humaneness of this practice.

There is scant scientific evidence to support the claim that altered cats defend their territory, and do not let other cats join the colony. It is well known that the home ranges of domestic cats overlap. Dr. Carol Haspel, who conducted a number of studies of cat colonies in Brooklyn, NY, says that cats occupying a certain area “absolutely do not” keep others out, “particularly if there is a feeder” (Donald 1992).

It has been extensively documented that domestic cats can severely impact seabird populations on islands (Moore and Atkinson 1984), and well-fed cats still kill wildlife (Adamec 1976). Cats and other predators can also have an impact on songbird populations in fragmented and isolated habitats (Wilcove 1985). In a scientific study in two California parks—one with over 20 cats that were fed daily, and one without cats, the researchers found that cats at artificially high densities, sustained by supplemental feeding, reduced the abundance of native rodent and bird populations, changed the rodent species composition, and may have facilitated the expansion of the house mouse into new areas. The scientists recommended that the feeding of cats in parks should be strictly prohibited (Hawkins, Grant and Longnecker 1999).

## **2. Humane Treatment of Non-native Domestic Cats**

*Comment:* The Humane Society of the United States believes that the risk of cats within Virgin Islands National Park to wildlife may indeed be too great, and that colonies should not be established and maintained. We do not oppose, therefore, the Park Service’s plans to humanely trap and transfer cats within the Park to a local animal shelter, provided that procedures are in place to ensure that traps are checked several times a day, that cats are subjected to the least stress possible, and that the Park Service works as closely as possible with local landowners and communities in an effort to stem the flow of cats into the Park by promoting responsible cat ownership.

*Response:* NPS has modified Phase I in the Proposed Action to address these concerns about non-native cat control. Phase I includes the following actions: “To prevent cats from becoming predators and harming wildlife, the NPS would work closely with local landholders and communities in an effort to stem the flow of non-native domestic cats into the Park by promoting responsible cat ownership. NPS would support programs to neuter or spay cats before reaching reproductive age, register cats, and encourage owners to keep their cats indoors; and do not release unwanted animals in Park natural areas. NPS would work with the scientific, conservation and animal welfare communities to educate the public about the dangers that free-roaming cats pose to human health, birds and other native wildlife and the hazards to free-roaming cats.”

Phase II has been modified to include: “Traps would be checked at no greater than 6-hour intervals so that cats are subjected to the least stress possible. The Park would work with local veterinarians prior to trapping to ensure that animal tags are available to the public so they can personally identify their cat as having a home so that the trapped animal can be returned to the owner.”

*Comment:* According to The Humane Society of St. Thomas, the Park Service has, in fact, been trapping and delivering cats to the shelter for some time. The EA should have acknowledged this, and should have discussed the strategies used, the success of these efforts, their acceptance by the community, community attitudes toward controlling cat numbers and responsible cat care, and related issues.

*Response:* NPS has modified Phase II of the Proposed Action to include the following additional language: Phase II consists of an initial, single, large scale direct reduction using live traps with efforts made to assist local animal care groups (e.g. St. John Animal Care Center) in placing the cats for adoption. Follow-up census/trapping efforts would attempt to remove approximately 100% of the 15-30 existing non-native domestic cats at such sites as Trunk, Cinnamon and Francis bays and Annaberg. Initially, efforts would be made with local citizen groups to have captured animals tested, sterilized and placed for adoption. Traps would be checked at no greater than 6-hour intervals so that cats are subjected to the least possible stress. Through funding provided by the St. John Audubon Society, the Park will work with local veterinarians prior to trapping to ensure that animal tags are available to the public so they can personally identify their cat as having a home so that inadvertently trapped animal can be returned to the owner.

*Comment:* The EA should include a long-term solution of mandatory spaying and neutering of cats on the island of St. John for the purpose of protecting the last natural resource we have - the National Park.

*Response:* The Final EA addresses these concerns through a Keep Cats Indoors Program. To prevent cats from becoming predators and harming wildlife, the NPS would work closely with local landholders and communities in an effort to stem the flow of non-native domestic cats into the Park by promoting responsible cat ownership. NPS would support programs to neuter or spay cats before reaching reproductive age, register cats, and encourage owners to keep their cats indoors; and do not release unwanted animals in Park natural areas. NPS would work with the scientific, conservation and animal welfare communities to educate the public about the dangers that free-roaming cats pose to human health, birds and other native wildlife and the hazards to free-roaming cats.

### **3. Animal-proof Trash Containers and Garbage Collection**

*Comment:* The overpopulation by “non-native” animals is a direct result of years of ineffective garbage control within the park itself. Dumpsters were commonly left full of trash overnight to be spilled out across the park by morning. Naturally, pets and pests were drawn from neighboring areas. The trash is now properly contained, but the effects of years of poor trash control cannot be undone all at once. It will take time.

*Comment:* In regard to trash being pulled out of the dumpsters. First, the donkeys, not the cats, are pulling out the trash; secondly, cats are fastidious feeders and rarely eat spoiled food in dumpsters; and most importantly, the observation implies that cats should be removed to spare the Park having to provide closed garbage.

*Response:* In fiscal year 2002, the NPS requested \$23,400 in funding to purchase and install 90 pre-manufactured animal-proof food storage lockers at the Cinnamon Bay Campground for use at each individual campsite and at each individual beach cabin. These lockers are identical to those used by California Department of Parks and Recreation for animal-proofing campsites and day use sites at California State Parks. Implementation of these projects will improve appearance at visitor use areas,

improve sanitation and reduce exotic animal populations, improve visitor and employee safety and health, and improve the visitor experience.

Currently, exotic wildlife species such as rats, cats and mongoose are able to access refuse deposited in park garbage containers at concession operations at Trunk and Cinnamon bays. As a result, animals are subjected to unnatural food sources which can threaten their health, attract wildlife to inappropriate areas, create a dependency on unnatural food sources, and contribute to a variety of nuisance problems including trash being dragged about visitor use areas. The availability of food both concentrates and enables populations of these problem species to increase, which leads to increased visitor interactions, most of which are unpleasant, and some of which can affect human health. This program proposes to remedy the problem by installing animal-proof garbage receptacles at concessionaire use facilities in the park. The containers will enhance visitor enjoyment, safety and health by reducing nuisance problems associated with wildlife access into trash containers.

#### **4. Use of Poisons to Control Non-native Wild Animal Populations**

*Comment:* We object to the use of poison that will cause the random, slow and agonizing death of small animals all over the Park. Avoid pest controls that produce terror and agony in the victims. Poisons have no place here.

*Comment:* Broad range poison will have a dangerous and detrimental effect on the reef's coral, the fish and the mangroves that incubate the baby fish, which are vulnerable to the slightest change. Other indigenous creatures; our land crabs and birds feed off dead creatures. They will find their way to poisoned carcasses and feed off the deadly meat. Thus, another level of damage to our delicate ecosystem.

*Comment:* The assertion that capture of other non-target species is unlikely is unsupported. What about ground doves, lizards, snakes, juvenile iguanas, and other small creatures?

*Comment:* The assertion that the baits used would not produce secondary toxicity and the trapping methods would not entrap any threatened or endangered species has not been proven.

*Comment:* The Draft EA fails to provide the public with information as to how it will prevent entrapment and poisoning of non-target species in the rat and mongoose reduction activities. The Final EA should address this important issue.

*Response:* Captured rats and mongooses must be killed because to relocate them would only transfer the problem elsewhere. The Final EA describes various techniques to capture and euthanize rats and mongooses (pages 15-19).

The Final EA addresses concerns about use of rodenticides and secondary toxicity impacts to wildlife in the Non-native Rat Control Techniques section of Alternatives 1 and 2. The description of the chemicals and poisons used has been expanded (pages 17-18).

Wetlands and floodplains impacts are positively affected by the proposed action (Alternatives 2, 4 and 6). More native flora and fauna would exist in and adjacent to these areas as foraging and predation pressure from non-native rat, cat and mongoose population decreases. Rats, cats and mongooses using wetland habitats routinely kill insects and other small native animals for food; therefore great numbers of wildlife are lost each year to a small predator population. Rats, cats and mongooses depredate a wide range of fauna, including ground-nesting birds, waterfowl, and every native species of reptile, amphibian, and literally hundreds of invertebrate species using wetlands and floodplain habitats.

No adverse water quality impacts would be expected under the proposed action.

## **5. Plan Organization Issues**

*Comment:* Objectives of such critical importance should be provided in the EA, not decided upon at some later date and without opportunity for public comment.

*Response:* The Final EA has been modified to include the following program objectives.

“The Virgin Islands National Park General Management Plan (1983) and Resource Management Plan (1999) identified the need to remove non-native animals from St. John Island. The objectives for management of non-native rats, cats and mongoose in Virgin Islands National Park, include:

1. Protect the native species and natural processes of the Park’s ecosystems by reducing the impacts of non-native rats, cats and mongooses on these species and processes.
2. Protect critical habitat of rare, endangered, and endemic species, and reduce non-native rat, cat and mongoose impacts on identified areas that are particularly vulnerable to predation and disturbance.
3. Protect rare, endangered and endemic species, which are presently or potentially affected by activities of non-native rats, cats or mongooses.
4. Ensure the opportunity for visitor experience of undisturbed natural processes by reducing the effects of non-native rats, cats and mongooses’ activity upon aesthetic and wilderness values of the Park.
5. Protect public health by monitoring non-native rats, cats and mongoose populations and individual animals for possible diseases communicable to humans, livestock or wildlife.
6. Minimize adverse effects of non-native rats, cats and mongooses control methods upon natural, cultural and human resources adjacent to the Park.”

Additionally, Phase II Quick Population Reduction Objectives specific to the three non-native animal species are detailed in the Proposed Action section of Chapter I on page 14.